

PUBLICATION NUMBER : 63153208
PUBLICATION DATE : 25-06-88

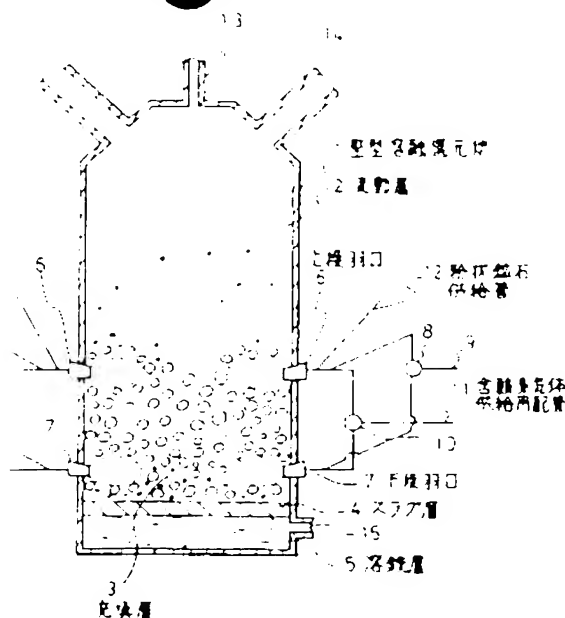
APPLICATION DATE : 15-12-86
APPLICATION NUMBER : 61296699

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INT.CL. : C21B 11/02 C21B 13/02

TITLE : PRODUCTION OF MOLTEN IRON
FROM POWDERY IRON ORE



ABSTRACT : PURPOSE: To stably execute smelting-reduction of powdery iron ore, by forming packing layer for carbonaceous solid reducing material in the furnace and fluidized layer on its upper side and further adjusting quantity of oxygen-contained gas and oxygen containing ratio, which are blown from tuyeres at upper step and lower step, independently.

CONSTITUTION: The upper step tuyeres 6 and the lower step tuyeres 7 are arranged in a vertical type smelting reduction furnace 1, and the packing layer 3 of carbonaceous solid reducing material charged from a supplying hole 13 and the fluidized layer 2 on its upper side are formed. The oxygen and oxygen-contained gas supplied from the above tuyeres 6, 7 through piping 9, 11 and distributing device 8, 10 are blown, and the powdery iron ore charged from the upper step tuyere 6 through the supplying tube 12 is smelting-reduced, to obtain molten iron layer 5 at the furnace bottom. In the above smelting-reduction method, the quality of oxygen-contained gas and the oxygen containing ratio blown from the upper step tuyeres 6 and the lower step tuyeres 7 are independently adjusted in accordance with grain size of the charged carbonaceous solid reducing material, to control the height and temp. of the packing layer 3. In this way, variation of temp. and composition of molten iron caused by changing of grain size distribution for reducing material is prevented and the operation is stabilized.

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